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ABSTRACT

This course text outlines the objectives and content for a professional continuing education course on clinical medical librarianship. Following an introduction to the course, the history of clinical librarianship and several programs are described. The third section offers guidelines for setting goals and objectives for a clinical librarian program. Procedures for presenting a program for administrative approval are examined in the next section, and choosing a department for initial implementation is discussed in section 5. The sixth section covers the development of policies and procedures, including a list of specific items to considered in documenting procedures. A checklist of areas of potential difficulties is presented in the seventh section. The text concludes with a summary of evaluation methods, including references to five published reports of clinical librarian program evaluations. A 26-item bibliography is included. (MES)

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CE 668

CLINICAL LIBRARIANSHIP

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Course Description

This course is designed to prepare librarians to initiate a clinical service in their libraries. It includes a history of the concept, suggestions for methods to approach the library or hospital administration to support such an innovation, practical techniques for designing a program suited to the particular library's resources, information on possible problem areas, and a consideration of legal and ethical issues. Also included are descriptions of daily procedures, and methods for evaluating the program. Online searching experience or capability is not a prerequisite.

Course Objectives

At the end of this course, participants should be able to:

1. explain the difference between standard reference services and clinical services
2. enumerate the current trends in the provision of health care that encourage the development of clinical service programs
3. set goals and objectives for a clinical service program suited to the resources (information, financial, and staffing) of the particular health care setting
4. formulate specific beneficial reasons for establishing a clinical librarian service at the participant's institution
5. construct an ordered plan for eliciting support from the hospital and/or library administrative personnel
6. write actual policies and procedures for the administration of a clinical librarian program
7. select an initial unit or department to work with, based on practical criteria
8. recognize that problems could arise and be able to suggest practical solutions
9. discuss the ethical and legal issues involved
10. evaluate the progress and success of the program in light of the initial objectives

COURSE OUTLINE

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INTRODUCTION

Since 1971, when Clinical Librarianship first began in the United States, programs have been initiated all over the country, in many types and sizes of medical libraries. Throughout this time, reports of different programs have appeared in the literature. They have been, for the most part, descriptions of how the program functions in a particular setting, without much discussion of the philosophical basis for establishing the service or much information on the "nitty-gritty" of actually planning such a program, e.g., actually convincing a reluctant administrator and/or department head of the worth of a clinical librarian program.

If clinical librarianship is to be more than just a vogue in the history of medical librarianship, it is important that the programs that are initiated are well planned, and organized in such a way as to give them every possible chance for success. The program planning must incorporate a mechanism for evaluation, so that its importance and efficacy can be documented -- the better to avoid the slings and arrows of budget cuts. Clinical librarian programs should not be perceived as a "frill" to perk up a library's image, but as a vital service which should be incorporated fully into an institution's provision of health care, and which should have a positive impact on the quality of that health care.

The content of this course is addressed to any person who

is thinking of initiating a clinical librarian service. The person doing the planning will not necessarily be the clinical librarian. The size of the institution and the library will vary. For these reasons, not all parts of the outline will be relevant to all cases. The immediate goal of the course is to provide a helpful planning tool for the development of successful clinical librarian programs. The long range goal is to encourage the incorporation of the CML's (Clinical Medical Librarians) services into the standard practice of medical librarianship. This latter goal can only be accomplished through your success. To accomplish the former, ten objectives have been formulated, and are given at the beginning of this text.

HISTORY

In the past twenty years there has been an ever increasing emphasis in health care on the development of specialists. In tandem with this development is the evolution of the concept of the health care team or patient care team. This phrase has been a MeSH heading since 1968. Certainly as knowledge became more specialized and the health care provider's area of expertise became more circumscribed, it became both natural and necessary to group those with complementary areas of specialization together. In large teaching institutions it is not at all unusual to have as many as 20 members of the health care team -- residents, interns, attending physicians, nurses, students, and perhaps a clinical pharmacist, a clinical librarian, and a social worker.

Clinical pharmacy programs have been around since the late 1960's. The concept undoubtedly grew out of a response to the same type of dissatisfaction with a relatively passive role that is being felt by many librarians today. Rather than being confined to providing product-oriented information such as drug availability, price, and dosage form, the clinical pharmacist has assumed the role of a drug therapy consultant. This process was not, indeed is not, without the same type of growing pains that new clinical librarian programs encounter. A look at some of the literature reveals acceptance as the major hurdle -- acceptance of the pharmacist's knowledge and education as sufficient to make him/her competent to assume this role. The phar-

macy literature indicates that "clinical pharmacy" is meant to be an amplification of the traditional role for all pharmacists, not just those in special drug information services or just a few specially trained clinical pharmacists."[1]

Librarians can draw an analogy with the development of these clinical pharmacy programs when considering the theoretical basis for establishing a clinical librarian program. Often library service is "product-oriented," providing information about the availability of reference tools, lists of sources containing information on a topic, instruction in the use of these items. In fact the "information explosion" has made it well nigh impossible for all but the most dedicated researchers to do their own information-seeking in an effective manner. Small wonder that a study investigating how health professionals get their information shows "word-of-mouth" from colleagues and medical literature from personal libraries are the preferred choices.[2] It takes only a small mental leap (and, admittedly, a lot of hard work) to realize that a librarian's best chance to have a positive effect on the quality of health care lies in becoming one of those respected colleagues. Yet, for years, librarians have sought a way to change their user's information-seeking behavior rather than change their method of providing that information.

In 1971, however, Dr. Gertrude Lamb began a Clinical Librarian service at the University of Missouri-Kansas City Medical School. This was partially supported by a Public Health Service grant from the National Library of Medicine which covered the time

period May 1, 1972 - April 30, 1975.[3] Dr. Lamb later moved to Hartford Hospital (Connecticut) where she also developed a CML program in cooperation with the director of the University of Connecticut Health Center and the help of a two-year medical library resource project grant from the National Library of Medicine.[4] These two projects are the seminal work in Clinical Librarianship. The UMKC project was described by Virginia Algermissen at the 73d MLA meeting in June of 1974. This description was later published in the Bulletin of the Medical Library Association.[5] This initial program first described the Clinical Librarians as "Science Information Specialists" and expected that they would perform the following functions:

> (1) observe and describe the biomedical information needs of the health care team members; (2) identify the characteristics of the supporting medical literature; and (3) develop the directions for the feasible organization of a retrieval system.

After one year there were three CMLs operating at UMKC, each with a different mechanism for disseminating information. One CML used the LATCH (Literature Attached to the Chart) system; the 2nd system was a weekly selection of abstracts entitled Current References; the 3rd was a filing system of relevant material called Latest Topics. The unifying theme to note is the problem-oriented approach. Continuing the analogy with the Clinical Pharmacy programs, the librarian has swung away from "product-oriented" information to focus on information provided to deal with specific therapeutic regimes. In an article appearing in the Hartford Hospital Bulletin[6] in June 1975, Dr. Lamb

describes in detail the clinical program as it was initiated there. In discussing the problem health professionals have when trying to find the information they need she states, "To help solve this problem, the approach at Hartford Hospital has been to define a role for the clinical librarian as a member of the patient care/teaching team who can provide information quickly to the physician and allied health personnel."[7] Her conclusions in this early stage of Hartford's Clinical program were that librarians were accepted in this role; that the program was seen as contributing to the educational activities of the hospital departments; and that the information provided by the CMLs did influence patient management decisions. Three years later at the 1978 MLA convention Dr. Lamb presented a paper entitled "Clinical Librarianship as a Continuum" in which she noted:

> The continuum of clinical librarianship as we now see it is a linear progression of events. Our progression replicated in each newly established service has been 1)acceptance, 2)impact on patient care, 3)influence on the information seeking behavior of health professionals through teaching information seeking skills.[8]

By this time there were several CML programs in operation. The bibliography gives a complete list of published descriptions, but for every one of these, there were sure to be 3 or 4 programs initiated. It is safe to say that all programs made some modifications of the original concept. The three programs that we will examine were selected for the different directions they exemplify.

The Cedars-Sinai program described by Colaianni[9] is interesting for two reasons. First, the motivating force behind the program is stated quite simply and frankly in the opening sentence: "The library staff in the Cedars-Siani Medical Center has been seeking more meaningful ways in which to make its services available to health professionals in the center."[10] This is important because it accurately reflects the increasing restlessness with more traditional forms of library service as we know them and indicates indirectly the growing desire among librarians to gain recognition of the value of their services and increase the status of the profession. This is not at all an unworthy motive, but it is one all librarians need to be aware of when trying to initiate a CML program. Very simply, an increase in the status of the librarian may be perceived as a threat to the status of other health professionals. It is necessary to be aware of the possibility of this type of reaction so that it can be effectively countered. This subject will be explored in more detail in the section on special considerations. The second reason that Colaianni's report is interesting is that it records the initiation of a CML program without adding staff. In the original programs, librarians were hired to be full-time Clinical Medical Librarians. At Cedars-Sinai the two full-time medical librarians rearranged their schedules to function part-time as CMLs. Their experience "indicated it requires 1 to 1½ hours to attend rounds and 2 hours to search the literature; that is 3½ to 4 hours of a librarian's time per week for each rounds attended."[11] This

is the first documentation that we have that an effective CML service can be offered without a large infusion of funds and without the necessity of dedicating a full-time staff position to the service.

The McMaster University program took a different approach entirely. The focus was on patient information and the objectives of the program were:

> (1) to assist patients in participating more knowledgeably in their own health care, and (2) to assist health professionals in applying the latest information from biomedical literature to patient care.[12]

Many hospitals and health care professionals are putting more emphasis on making the patient an informed consumer. Indeed, there may be outside pressures which encourage this in an effort to prevent liability suits. An institution may hire someone specifically for the purpose, or delegate the responsibility to someone already employed. For a medical librarian planning a CML program the degree of institutional involvement (or lack of it) in patient education may offer a unique opportunity to receive approval to begin a CML service and, perhaps, the opportunity to receive increased support in the budget and/or staff.

The final program we will look at was originally described by Clevesy at the 79th MLA meeting and later appeared in the January '80 BMLA.[13] It represents the type of program that it is the goal of this course to encourage. Framingham Union Hospital is a 309-bed community hospital. At the time the CML service was begun, the library subscribed to approximately 300 journals. Clevesy attended only morning report; she did not go

on bedside rounds with the clinical team. Her conclusions are important for the continued integration of CML service into standard medical library practice:

> These information delivery programs innovated at the university medical center can be adapted to the community hospital where the information needs are even greater. It is our experience that a modified CML program is a valid approach to facilitate the information transfer essential to the provision of quality medical care.[14]

In all of these descriptions, the underlying purpose, even if not directly stated, is to assist the clinicians and other health care personnel to provide the highest quality of health care. Surely, the standard approach to reference work in a medical library has this as its underlying rationale. In his discussion of the reference process William Katz states:

> One expects the librarian to provide an answer or at least to indicate where or how the answer may be found. Disengaged from necessary quantitative and qualitative variables, reference work is the process of answering questions.[15]

Therefore, there is no need to define a Clinical Medical Librarian outside the traditional frame of reference services. Rather it is a new approach to providing information, developed in part because of the increasing complexity of the retrieval process; in part because of the recognition of clinicians' need for this type of approach to information services; and also, in part, because technology (telephone, photocopier, computer terminal) has developed enough to make this response possible. Agnes Roach provides a concise, yet encompassing description of a clinical librarian that may serve as a working definition:

> A clincal librarian becomes a member of a patient care team, attends educational conferences, patient rounds, grand rounds, etc. in order to identify needs for information, to find that information, and to deliver it within a very short time (ranging from minutes to hours). The program enhances patient care by providing current literature quickly. It also enchances the educational process for all team members by keeping them aware of new techniques and therapies. Clincal librarians spend some time instructing team members in the use of the library tools and facilities. Since health care personnel are very busy and often confined to certain locations (such as the operating room, hospital wards or clinics), this program makes resources somewhat removed from them easily accessible... By being present the clincal librarian can anticipate questions as well as answer those that might never have been asked.[16]

It can be seen from this description tha the role of the CML fits into a continuum of dynamic redefinition of the role of the traditional reference librarian. It is the result of some specific enhancements to this traditional role, and is in keeping with the best traditions of librarianship.

SETTING GOALS AND OBJECTIVES

To quote Estelle Brodman, "Keep us from doing efficiently what does not need to be done at all."[17] While the basic assumption underlying this course is that establishing Clinical Librarian programs is something that needs doing, it is best when planning a program to assess the needs at a particular institution. In assessing needs, the following checklists may be helpful. These needs may be perceived (by you or by others) or they may be needs that have already been documented (in a previous self-study, for example). Not all of the following questions will be appropriate to all institutions.

A. Institution

1. Is there a Department of Education for continuing education and staff development?
2. Does your institution support a teaching program?
3. Do the health professionals have access to a medical library other than the one at your institution?
4. Is the institution involved in a building program, or likely to be within the near future?
5. What are the stated goals and objectives of your institution?
6. What type of commitment has been made to patient education?
7. Is there an emphasis placed on competition with institutions in the same area, or with institutions of similar size?
8. What are the long range plans for institutional development?

9. Is the institution's service base expanding or contracting?

10. Is there a climate for acceptance of innovative programs?

11. What is the financial picture of the institution?

Questions one through five are ones that should have straightforward answers. Answers to the remaining questions depend more on your perceptions and/or those of others. But it is most important to develop answers to these questions, and the more completely documented they are the firmer the groundwork will be for program development. In some cases the answers might indicate that the time is not right tc attempt a Clinical Medical program at your institution. Their chief use however is to give you a framework for developing a rationale for justification for the program. The answers should give you a list of selling points. They should determine the type of approach to take. For example, in answer to question 1, if your institution has a well developed and functioning Continuing Education program for the staff, perhaps the director of that program would be a good person to contact and coordinate with; if the answer is that the staff development effort is disorganized or non-existent, then perhaps you have a selling point to your administration. It is important to be willing to think creatively and flexibly with the basic information you generate in answering these questions. If your program will answer one or more institutional needs, it has a better chance for acceptance and survival. Now, consider your library.

B. Library

1. What is the library's image within the institution?

2. Are there differing perceptions depending on the type or status of user?

3. Is there a need for more staff, a larger budget?

4. How will other library staff members react if the program causes an increased workload for them?

5. Are there any physical arrangements which would make it difficult to operate a CML service efficiently? (e.g., photocopy machine 3 floors away, sharing a computer terminal)?

6. Is there a group of potential users that is currently not being served?

7. In a larger library -- would it be an advantage to other reference librarians on the staff to have information about what current clinical problems are facing the hospital staff?

Finally, consider the librarian who will be filling this position:

C. Librarian

1. Has he/she had any experience working in a hospital or other medical library?

2. Any library school courses in medical librarianship?

3. Any knowledge of medical terminology?

4. How does this person respond to stressful situations?

5. Is the person able to assert himself? pleasantly?

6. Can this person work well under time deadlines?

7. Is the person a "self-starter?"

If the development of a CML program can provide impetus for professional growth for the librarian involved and others on the library staff, then it certainly has a better chance for effec-

tive implementation. A librarian may be more comfortable interacting with other librarians to meet needs for professional growth (e.g., organizing consortiums, serial union lists, online user groups) rather than with health professionals.

Once an accurate assessment of the needs of the institution, the library, and the librarians and staff who will be involved has been made, then goals can be set for the program based upon these needs. After goals are formulated, it is necessary to translate them into a list of performable and measureable actions appropriate to reaching each goal. This list will be the objectives of the program. When setting goals, keep in mind that a goal is a long range aim; it often sounds very idealistic, and is usually described in such broad general terms as to render it difficult to measure in any meaningful way. Notice the goal that was set for this course.

Write 5 possible goals for your CML program.

Examples of such goals for a CML program might be:

1. To improve the quality of the provision of health care.
2. To make health care personnel more effective information seekers.
3. To improve patient education.
4. To create higher visibility for the library.
5. To provide a more complete utilization of the librarian's skills.

The objectives must be related directly to the goals that have been set for the program. Notice the objectives that were set for this course. They are very specific, and are capable of immediate achievement. They are deliberately limited in scope, and an attempt was made to phrase them in such a way as to make them suitable for being measured. This latter point will be particularly important when the program is evaluated.

Write 2 objectives for each of the first 2 goals you listed.

Some possible objectives appropriate to the goals listed above would be:

1. To enable the health professional to access current information within 24 hours.

2. To increase house staff use of the library by 30%.

3. To affect patient management decision in 20% of the cases.

4. To ensure that 100% of the medical students rotating through "x" department know how to use Index Medicus.

There is no set number of goals or objectives that you must have. It is important however that the goals of the program complement the goals of your institution and/or library. The number of objectives that you write for each goal should be as complete a list as possible of things that need to be done to reach that goal. Keep in mind that you can establish priorities for objectives based on staffing, budget, etc.

PRESENTING A CML PROGRAM FOR ADMINISTRATIVE APPROVAL

The literature available on CML programs gives one faint clues as to the methods of getting authorization from the appropriate administrative authorities to begin such a program. Other than the two seminal programs described by Algermissen[18] and Lamb[19] the only documentation for getting official approval is described in Marshall and Hamilton's report[20]:

> The Gastroenterology Program offered to accept the clinical librarian as a member, after a written proposal to establish the role on a part-time basis was approved by the senior executive committee of MUMC. A small budget was approved to cover the cost of photocopying and printing, but the librarian provided the clinical service without additional compensation and in addition to her regular work load in the Health Sciences Library.

In some cases this is because the person designing the program was the appropriate administrative authority. In other descriptions however, it is hard to tell if any approval was ever sought. In some cases where no staff was added and the library absorbed all costs, it might not seem necessary to put the program plan through a potentially lengthy process of approval. If however, the program proves so successful that it generates increased workload and costs beyond the library's ability to absorb, the entire program may have to be jettisoned. It is human nature to be loath to pay for a service once it has been received for nothing. If CML programs are to become part of standard medical library practice, they must be put on a firm financial footing from the beginning. If a pilot project is

offered gratis, to demonstrate its usefulness to a potential user group, everyone involved should clearly understand the temporary nature of the "free lunch." If a person in authority (and preferably in a position of some financial authority) has a commitment to the program, it has a better chance of continued survival. From the broader view of benefit to any librarians who may "inherit" the program, it is only professional courtesy to establish it on the most solid base possible.

A. Consider the administrative structure

Obtain an organization chart for every one of the following that is applicable to your situation:

1. Hospital
2. University
3. Library

The first person to approach would naturally be your immediate supervisor. Your supervisor may be a person with fiscal authority and be receptive to your ideas. But even if this is the case, it is a good idea to look at those organization charts with one eye on your original checklist of insitutional needs. Any person on the organization chart who could benefit from a CML program should be noted. All of the latter and at least some of the former need to be approached in the initial planning stages to discuss potential benefits, and to allay fears of "empire building."

B. Consider any actual costs involved

It is always helpful to try to cost out a service. Even when there is no intention of charging back all or any of these costs to the user's department, it will help in later evaluations to have a cost figure. Have you figured out what it costs your

library to answer a reference question? For a Clinical Medical Librarian service it is possible to arrive at a cost per user, or a cost per question by adding in items such as the following:

1. Librarian's time
2. Auxiliary staff time
3. Photocopy costs
4. Computer search costs

This will not be the real cost of the service. It does not include supplies, increased work generated for other staff in the way of reference and interlibrary loan; increased wear and tear on library material as usage increases, etc. Information on the cost of a CML service has been reported in two cases. At the University of Washington, Staudt, Halbrook, and Brodman[21] arrived at a cost for the service by adding up totals for:

1. Personnel
2. MEDLINE
3. Manual searches
4. Photocopies

In 1975 their cost averaged $661 per month. They divided this figure by the total number of users served to arrive at a figure of $17 per month per person.

In their 1976 article, Schnall and Wilson[22] simply added up the total number of hours spent on rounds and on searches in order to get a personnel cost, then added in a total MEDLINE cost and divided by the number of weeks the program was in effect to get a cost per week of between $26-$28. They calculated the personnel cost per round at $17-$27. To decrease this cost the CML was limited to attending rounds only once a week. The total six month cost then worked out to $632. They

of CML programs. It states:

1. The librarian has an improved feel for what information the health professional needs.

2. The health professionals understand what the librarian can contribute as a member of the health care team.

3. Many questions raised at the bedside are never answered because the pressures of other activities discourage the requestor from going to the library.

4. Evaluations made by the physician indicate that the program has immense educational benefits which cannot help but be reflected in improved patient care.

Other arguments in a less altruistic, but nevertheless relevant spirit are:

1. Hospitals are competitive about initiating innovative services.

2. The CML service can be used as an advantage in recruitment efforts.

D. Present your plan

Your organized plan of action, with its list of concomitant benefits, needs to be presented through the channels appropriate to your institution. Most frequently this will probably be the Library Committee and the hospital administration. You may wish to have certain key people read an article or two describing other CML programs. If you should happen to find a staff member who has previously worked at an institution having a CML program that could be a plus. Finally, be prepared to answer possible objections; for example:

1. The hospital administration does not like the idea of you leaving the department you are responsible for.

note that cutting attendance in half did not cut the number of questions by half, but by only 30%. Of course these figures are not an accurate reflection of what today's costs would be because of inflation, but the method of figuring would still be the same. To estimate the initial costs look at the reports of the varying amounts of time spent by librarians in these programs; arrive at an estimate of the time that could initially be allotted in your program, depending on the number of rounds, conferences, etc. the CML would be attending; and compute an initial cost estimate based on these figures.

C. Construct a rationale for the program

At this point in planning a CML program you have:

1. A complete list of the needs that your institution has.
2. A complete list of all administrative people you need to contact about the plan.
3. A complete list of all other personnel who might help in implementing the plan.
4. A list of the goals you are trying to achieve and the objectives relevant to each.
5. A good assessment of the costs in time and money of the type of CML program you propose.

Now these collections of information need to be blended in such a way as to construct a justification for the program you plan. You need to make the audience an offer they can't refuse. There is quite a bit of documentation in the literature about the benefits of a CML service. Colaianni's article[23] lists four positive results which are reflected in succeeding reports

2. A department head objects that you will be doing work the physicians, nurses, medical students, etc. should be doing for themselves.

3. The patient education coordinator objects that you will be invading patients' privacy.

4. A physician objects that the rounding teams are too large already.

Once your plan has received the appropriate approval, you can begin to put it into action.

CHOOSING AN INITIAL DEPARTMENT

In many cases choosing an initial department is actually accomplished at the same time that you are getting approval for your plan. In fact, if you have an enthusiastic department head already lined up, it may make getting approval that much easier. In larger institutions however, it may be hard to identify receptive departments. One possible way would be to ask the Library Committee for help in identifying appropriate departments. Some general guidelines you might want to use are:

1. Identify individuals who are interested in continuing education.
2. Identify an active department -- one with high patient turnover.
3. Look for a department whose team members are already library users.
4. A department with a changing technology might offer a good opportunity.
5. Seek a department with a schedule compatible with yours; consistent attendance at rounds yields better results.
6. Look for a department that has its own "library" collection -- this should indicate a need for information.
7. Seek a department with information needs that are immediate rather than one with "academic" questions which can be answered through regular channels.

Different departments will fit these guidelines in different hospitals. Pediatrics, surgery, and obstetrics seem to be mentioned most frequently in the published literature, but a listing of all active CML programs shows a very wide variety.

As these programs become more common it will not be unusual for health care professionals new to a staff to request that a library initiate such service.

There is an interesting comparison of the level of acceptance of CML service between two different departments at the University of Washington, Seattle.[24] Ninety-seven percent of the National Intensive Care Unit team rated the service as clinically valuable, versus only 67% of the Orthopedics department. Schnall and Wilson state:

> It was observed by the CML in the Department of Orthopedics that the attitude and leadership of the departmental team leaders were important factors in the effectiveness of the service; because they appear to influence positively or negatively the use made of the service by others. In the orthopedics department a literature-oriented chief resident receptive to the experimental program was succeeded two and one-half months later by one who acknowledged that his reading of the literature was extremely limited and who made no attempt to stimulate problem solving discussions during rounds.

DEVELOPMENT OF POLICIES AND PROCEDURES

A. Policies

A policy should generally contain a basic description of the service including the reasons for offering it; a listing of those who will be eligible to receive the service (or to whom the service will be offered); any restrictions placed on the service; a rationale for the eligibility requirements or restrictions. This policy can be written so that it can be used as a handout to any new staff, to acquaint them with the program. It also might be used as a news item in any inhouse newsletter. The following is a sample description of a clinical program. Notice that it describes what the service is, why it is being offered, and who it is available to.

> The clinical librarian is a member of the patient care team. He/she joins the team on rounds, at morning report, on grand rounds, and at clinical conferences, to be "on-the-spot" to identify information needs. By hearing the case history the CML can compile a precise bibliography to help the team in direct patient care. What drug is best? Should we operate? What are the complications of this disease? What is the disease? The clinical librarian searches all available library material to answer the above questions. This may mean accessing computer database services or searching manually. Currently only a bibliography with abstracts, if available, is given to the team member handling the patient, but the goal is to select several pertinent articles, photocopy them, and give them to the team member. This service is performed within 24 hours from seeing the patient. If the patient care team member requests retrospective searching which is too complicated to do manually it can be computer generated in about a week. Even though the clinical librarian does not round with every member of each department, the service is extended to them. Phone requests are accepted. Material is delivered within 24 hours.

> It is intended that such a program of clinical librarianship would involve the medical librarian very closely with direct patient care as well as the educational function of the Medical College of _____ while demonstrating the information resources available in the library. We hope this will encourage independent use of the library. Areas of need and service procedures will be identified by the clinical librarian and members of the graduate medical education council.
>
> The current clinical librarian program at the Medical College of _____ began as a pilot project in the Spring of 1977, working with the pediatric and cardiology departments. The project was successful, and therefore a full-time position was created in the fall of 1977. Work has continued in the pediatric and cardiology departments with hopes of expanding to other departments as requested. On Monday, Wednesday, and Thursday, the clinical librarian attends pediatric morning report. On Wednesday the CML rounds on North 5 -- a pediatric ward. On Thursday the CML rounds on North 4 --a pediatric ward. The CML also stops by the sick baby nursery occasionally or is in phone contact with the patient care team. On Monday morning rounds are made on the Coronary Care Unit. On Tuesday and Friday mornings rounds are made on West 15 with the cardiology team. On Tuesday and Friday afternoons rounds are made with the cardiology consult team. Statistics are kept on tally sheets noting time spent rounding, number of requests, and how much time is spent searching. These statistics are compiled monthly.[25]

Notice that this service is offered to all members of the patient care team. There have been reports in the literature of much more restricted eligibility.[26,27] In general it is probably better for the acceptance of the program as a necessary service and for the CML as a member of the patient care team if the service is open to every member of the team in the department being served.

Another point to consider is the extent of the service you wish to offer. Will team members use the CML even when their

question does not have clinical immediacy? Will the CML spend time generating bibliographies for research articles, conference presentations, or books? If you have other reference librarians in your library it may be a good idea to limit the CML's services to responding to patient-oriented clinical questions. Marshall and Hamilton favor this approach, pointing out that this prevents too much dependence by members of the team on "their" CML.[28] They recommend that if the CML is approached by team members for help with a rounds presentation or research project that they limit their assistance to explaining how to do the search and to advising on sources. The team members become more sophisticated library users by learning who to ask for assistance, and by learning what kinds of questions to ask.

Also, will you be setting up any type of subsidiary information system? A file of articles? The initial grant-funded programs placed a large emphasis on identifying a clinically useful body of knowledge and somehow "dissecting" it out of the whole body of health care information to make it more readily available to the clinician.

B. Procedures

Your procedures would be a list of the day-to-day activities you expect to occur, with a step-by-step list of who is responsible for what actions. You might want to start by making a flow chart of how you expect the day to run. If the clinical librarian will be serving different departments on different days, a weekly schedule should be set up to let

other library staff know the CML's whereabouts. The most distinguishing feature of most CML programs is that the CML goes "on rounds" with the health care team. There are several types of rounds:

1. Attending Rounds

   Attending rounds are usually held after work rounds so that all team members are familiar with the current status of their patients. These rounds are conducted usually by the attending physician for the service. The purpose is to discuss the status of the current patients and to present and discuss any new admissions. Any alternatives of patient management are presented and discussed with the attending physician at this time. An important purpose of attending rounds is to provide a forum for teaching "medicine" to the students and House Officers.

2. Check-Out Rounds

   Check-out rounds are usually in the afternoon. These are often very informal rounds and are conducted by the chief resident or the senior resident on call for that evening. The purpose is to review the condition of team patients with those House Officers on call that night to insure that all orders are straight and that the team members are familiar with any particular patient problems.

3. Consult Rounds

   Most medical and surgical services at large medical centers have consultaton teams which provide additional care for patients. For example, the cardiology consult team would probably be called to consult on a patient who was scheduled for surgery if the patient has a history of heart disease. The cardiology consult team would in turn make the appropriate recommendation as to the management of the patient's cardiovascular status and perhaps check in on the patient a few times post-surgery. Other services such as neurology, pulmonary disease, endocrinology, etc., provide the same service rounds. These rounds are often conducted similarly to attending rounds.

4. Grand Rounds

Grand rounds are usually held once a week at varying times of the day. Often a guest lecturer or a member of the department presents a talk on a current new treatment, a new drug, or an overview of a disease. These rounds are generally open to all faculty members and House Officers as well as any interested individuals in the institution. The purpose is to keep the department members up to date on current medical trends and to provide general reviews.

5. Morning Report

Morning report can often vary from institution to institution. It usually takes place first thing in the morning. In some institutions any new admissions are presented to team members. In other institutions Morning Report can have a more academic flavor. A short review on a disease or a new therapy can be presented to the group.

6. Teaching Rounds

Teaching rounds can vary from institution to institution. Often they consist of the attending physician and the medical students on the service going over aspects of physical diagnosis of the patients currently on the service. For example, the attending physician on the cardiology service might spend an afternoon going over heart murmurs of the patients. Other times they might review a current topic such as the diagnostic work-up of hypertension or the pharmacological aspects of a new drug.

7. Work Rounds

Work rounds usually take place in the morning and are conducted by the resident or Fellow in charge of the particular service or team. All the House Officers and students on the team attend these rounds and in some cases, a nurse or pharmacist can also make rounds with the team. The purpose of work rounds is to allow the House Officers on call the prior evening to inform other team members of the status of the patients on the service. Discussion and decisions regarding patients' management can also be introduced as well as the opportunity for some "informal" teaching by the resident when questions arise.

There are alternatives to rounds for the CML program, however. Staudt, et. al.[29] report that in their program "the Clinical librarians did not go on rounds with the physician and his team, but instead sat in on residents' reports from which the librarians gleaned the problems for which a search of the literature might be appropriate." Also, Schnall and Wilson[30] note that as long as the CML is present at departmental discussions held for reviewing management of current cases, it is possible to have an effective service without the librarian going on rounds. At this point you know to what departments or services you plan to offer the CML program. A decision about what rounds you will attend with these departments is probably best arrived at by first discussing the possible choices with the person in charge -- department head, chief resident, etc. -- and secondly, by the simple trial and error method of sampling available rounds and seeing which ones seem to have the right mix of interaction and information. In documenting your procedures, state which rounds you are attending and why. If you decide to switch to different rounds or to a different department, document your reason for the change. It will help you when you are considering evaluating the program, and it will also help anyone who comes after you to avoid reinventing the wheel.

Other items you might want to consider in establishing a set of procedures are:

1. Bibliographies

What type will you provide? Just limited to clinical articles or any requested? Will you annotate? Will you try to cite only articles that are in journals in your collection? Will you retain a file of those created? If so, where and how will they be maintained? Updated?

2. Online Searching

This is a timesaver, but several early reports on CML programs noted that much of the searching was done manually. The big difference here may well be your audience. Colaianni[31] notes, "Literature searches are usually done manually because of the small number of references required." In contrast, Farmer and Guillaumin[32] state, "When a faculty physician requests a literature search for a problem that is part of his or her specific field, the librarian knows that possibly nothing will be found." In practice many of the questions that a CML gets can be answered with access to a group of standard clinical materials. Whether you are offering computer searches or not, you may want to keep a standard work in each field shelved close to the CML's work area so that the material does not have to be pulled from the library shelves each day. If you have a separate area already set aside for computer searching with a collection of manuals and thesauri, you may want to combine the two. CML service to a department can be expected to generate anywhere from 20 to 50 searches a month. It is not absolutely necessary to have access to computer searching on the premises. It is, however, absolutely necessary that the potential CML have a clear understanding of what computer searching can and cannot do, have a good knowledge of what information is available in the different databases, and have a good working relationship with the nearest MEDLINE center before initiating service.

3. Time Scheduling

How do the scheduled rounds fit in with the usual operating hours of the library? Of the other librarians? Is there sufficient time allotted after rounds for completing search requests? If you need to run computer searches will clinical searches have priority at the terminal over requests generated at the reference desk? Length of rounds often vary a great deal depending on

the number of admissions and the personality of the person conducting them. Is the CML's schedule at the library flexible enough to accomodate this?

4. Document Delivery

Will photocopies of relevant articles be provided? Who will photocopy them? Who will deliver them? Who will pay for them? Who makes the choice of which articles are relevant enough and important enough to deliver? Possible options here might include:

(a). generating only a bibliography;
(b). generating and delivering bibliographies that have been annotated, or contain abstracts;
(c). having journals containing the relevant articles pulled and held in a separate area in the library for the team chief or other member to judge which would be most appropriate or helpful;
(d). having the CML scan the list generated and make the decision about which articles would be most relevant.

5. Record Keeping

Early CML programs had the CMLs keep running diaries. This might provide interesting information on a short-term basis to judge the work flow, variations with different team chiefs, and rate of acceptance. For long range planning and evaluation, however, it is important to keep certain basic statistics. Items to count might include:

(a). number of manual searches;
(b). number of computer searches;
(c). number of information requests;
(d). whether the question was user-generated or anticipated by the librarian;
(e). the status and/or department of the user making the request.

You might also want to keep a card file of search topics with strategies for searches that recur and a file of articles that are considered highly relevant on a topic.

6. Backup Procedures

Will the CML take phone requests in the library?

If the CML is not there, are other staff scheduled to cover?

The list of procedures you generate will undoubtedly change as problems arise, or as more efficient ways of proceeding become clear to you. At this point, however, the program is actually ready to begin.

SPECIAL CONSIDERATIONS

There are two good ways to reduce problems in a CML program. The first is to visit individually all the members of the health care team before initiating the service to thoroughly explain your aims and encourage use of the service. The second is to have a well planned, enthusiastically accepted program. There will be problems anyway. The following checklist will give you an idea of areas that may present difficulties.

I. Question negotiation

A CML is providing reference service "on the run." It may be difficult at times to get a chance to clarify requests. Some of the parameters of a request can be picked up from the rounds discussion. A CML new to the service, however, is going to need time and help to become familiar with the terminology. Since the CML is probably going to choose articles, rather than just generate a list, he/she will need more information than might be volunteered at the usual reference interview. The following protocol is one used by a clinical pharmacy program, and might suggest things a CML would need to note while on rounds.

PROTOCOL FOR HANDLING DRUG INFORMATION REQUESTS

I. Obtain the caller's name, location and telephone number.
II. Determine the nature of the request.
III. Obtain the necessary background information.
  A. If the request concerns a patient --
    1. patient's name, location, age, weight, and sex
    2. past medical history
    3. organ function
    4. current drug therapy
    5. drug allergies

B. If the request concerns drug identification
   1. trade, generic, chemical name
   2. manufacturer
   3. country of origin
   4. therapeutic use
   5. dose form and appearance
   6. reference source for request
   7. reason for request

C. If the request concerns drug reactions
   1. signs and symptoms of reaction
   2. severity of reaction
   3. when did reaction occur relative to drug administration
   4. what other drugs has the patient taken
   5. does the patient have other medical problems
   6. what has been done to treat the patient so far

D. If the request concerns drug dosage
   1. for what indication is the drug being prescribed
   2. age, sex, weight, height of patient
   3. renal and hepatic status
   4. what other drugs is the patient taking
   5. any drug allergies

E. If the request concerns drug interactions
   1. what are the drugs being taken or what type of laboratory test is involved
   2. dose and duration of the drug therapy
   3. what is the time relationship between administration of the drugs
   4. details of the interaction
   5. medical status of the patient
   6. treatment or corrective measure taken

F. If the request concerns drug therapy
   1. age, sex, weight, race
   2. what is the diagnosis
   3. what are the complicating factors, other disease states
   4. hepatic and renal function
   5. other medications being taken, past drug history
   6. any allergies or past drug reactions

IV. Get an estimate of how soon the requestor needs the answer

V. Search the reference material available to you:

A. Tertiary -- e.g., textbooks
B. Secondary -- Iowa, Drugdex systems
C. Primary -- journal literature

VI. Formulate a response

A. State the problem
B. Summarize your findings
C. State your recommendations
D. Give your references

VII. Follow-up

A. Was the correct question asked and the right answer given?
B. Was the answer used to improve patient care?
C. Can further assistance be given?[33]

II. Document Delivery

The question of cost arises here. There may be a problem in deciding who pays for the photocopy, the user or the library, or perhaps the department. There may be pressure to provide multiple copies, and there is a danger that the CML may be looked upon as a glorified copying service. It is necessary to be able to explain the copyright guidelines.

III. Acceptance of the Program (and the CML)

Despite the recent emphasis on librarianship as a profession, librarians and users still perceive their role as responding to a service request, rather than as offering professional advice. Even users supportive of the program may feel threatened if they perceive the librarian as usurping an area of control. The following list of questions were generated for use during a discussion on acceptance at the Clinical Librarianship Symposium held May 4-5, 1978, at Hartford Hospital.

1. Is the department willing to accept the CML as a colleague?

2. Does this acceptance depend on the types of services offered?

3. Does acceptance vary from department to department?

4. Does acceptance depend on whether the CML is full-time or part-time?

5. Is it essential to have a "mentor?"

6. Is acceptance heavily dependent upon personality?[34]

We must acknowledge that there is a constant tension between the need to prove the efficacy of the service, and the personal need of the CML to feel a sense of rapport with the team on one hand, and the need to avoid becoming a "gofer" or fostering unhealthy dependence on the other hand. It is not easy to maintain the correct blend of assertiveness and flexibility. Any Clinical Medical Librarian has to have self-esteem and good communication skills.

IV. Action and Reaction

While some items on the following list may be transitory problem areas that disappear as the CML gains experience, they cannot be considered minor problems. Mole hills do sometimes turn into mountains.

1. There may be a tendency to provide too much material, especially in the beginning, to avoid missing anything.[35,36]

2. The constant exposure to illness and death may be difficult for the CML to cope with.[37]

3. Some members of the health care team may object to the CML's presence in the patient's room.

4. A rotating housestaff and student user group may make it difficult for the CML to establish rapport.

5. There may be objection to offering a "Cadillac" service to one department and not to others.

6. Maintaining a file system of subjects searched, strategies used, and/or useful articles may be burdensome.[38]

V. Ethical and Legal Considerations

On February 6, 1973, the House of Delegates of the American Hospital Association approved A Patient's Bill of Rights. The bill has twelve sections. The three which impinge directly on Clinical Librarianship are as follows:

Section #2 --

> "The patient has the right to obtain from his physician complete current information concerning his diagnosis, treatment, and prognosis in terms the patient can be reasonably expected to understand. When it is not medically advisable to give such information to the patient, the information should be made available to an appropriate person in his behalf. He has the right to know by name the physician responsible for coordinating his care."

Section #3 --

> "The patient has the right to receive from his physician information necessary to give informed consent prior to the start of any procedure and/or treatment. Except in emergencies, such information for informed consent should include but not necessarily be limited to the specific procedure and/or treatment, the medically significant risks involved, and the probable duration in incapacitation. Where medically significant alternatives for care or treatment exist, or when the patient requests information concerning medical alternatives, the patient has the right to such information..."

Section #4 --

> "The patient has the right to every consideration of his privacy considering his own medical care program. Case discussion, consultation, examination, and treatment are confidential and should be conducted discreetly. Those not directly involved in his care must have the permission of the patient to be present."[39]

Presumably, Sections 2 and 3 would promote a climate favorable to well developed information services, including CML programs. Section #4 however might be interpreted as eliminating the possibility of having a librarian attend bedside rounds. It depends on whether the librarian is perceived as a member of the health care team, and "directly involved in the patient's care." Very few articles on CML programs touch on this topic. Schnall and Wilson[40] mention negative reactions from some departments that thought the CML would further crowd a patient's room without adding anything constructive. They comment, "It should be remembered however that many of the reasons for hesitation are valid, and it is not the purpose or role of the librarian to become personally involved with patients, to complicate the physician-patient relationship, or to intrude upon the privacy of any individual." The McMaster University program[41] was deeply involved in providing patient education, but they report that the CML was uncomfortable at being present during the physical examination of the patient. The CML routinely slipped out of the room during the examination and rejoined the team at the next bedside. This procedure also alleviates any patient discomfort at having so many people around, and should

also satisfy a nervous administration. As previously mentioned, CMLs can function quite effectively without attending rounds.

Legal problems may also arise if information provided by the CML is attached to or included in the patient's record. If a physician does not incorporate the information into the therapeutic regime, for whatever reason, it may ultimately be interpreted as malpractice. Always check any state or local codes which may be applicable to your institution. Even if there is no apparent legal problem, it might be prudent to get an opinion from your institution's legal counsel.

EVALUATION OF THE PROGRAM

Usually, it is possible for librarians involved in CML programs to have a good idea of whether their service has been successful. It is important to get some feedback that is more formal than the CML's feelings, however. If you have begun your program with defined, measureable objectives, an evaluation should be able to tell you whether you have achieved them. For example, if you wanted to increase house staff use of the library by 50%, you need to have an original count on the usage, and a method to determine whether it has increased. Some of the most common questions you might want to ask are:

1. Do the team's feelings about the value of a CML service match yours?
2. Has the service increased the team's knowledge of how to find material in the library?
3. Has the service increased use of the library?
4. Has the service been cost effective?
5. Is the service perceived as most important to patient management, or seen as an education tool?

Decide what you really need to know in order to choose a method for the evaluation. You might want to do a perception evaluation or a performance evaluation, or a little bit of each.

A. Perception Evaluation

Use this method to find out if users have altered perceptions about the value of library service, or the ability of

the librarian, or the complexity of retrieving information. An interesting example of this type is described by Nelson, et. al.[42] Entitled "Changes in physicians' attitudes toward pharmacists as drug information consultants following implementation of clinical pharmaceutical services," the study was set up in a before-after design in order to document altered perceptions. Physicians were asked to rank the importance of five areas of knowledge or expertise to patient care. The ranking was on a scale of 0-5:

0 - no opinion
1 - of no concern
2 - of little concern
3 - of some concern
4 - of moderate concern
5 - of great concern

The respondents also rated their perceived degree of competence in these areas, and their perception of the pharmacists' degree of competence in these areas, also on a scale of 0-5:

0 - no opinion
1 - not at all competent
2 - slightly competent
3 - somewhat competent
4 - moderately competent
5 - very competent

There was a significant difference in physicians' perceptions after one year of clinical pharmacy service. They had a more favorable perception of the competencies of the pharmacist. Using this type of method, the altered perception is quantifiable, expressible in numbers and percentages, and is therefore measureable and reportable.

B. Performance Evaluation

Use this method for information about the cost and cost effectiveness of the service; also useful as a measure of the quality of the service. In this type of evaluation you will be generating "hard" figures. For example,

1. How many users did the CML serve?
2. How many questions were answered by the CML?
3. Was the information provided useful?
4. Was the information provided used for patient management or teaching?
5. What was the success rate of the CML in finding appropriate articles?
6. What was the turnaround time for answering questions?
7. How many questions were generated by the team, and how many by the CML?

In either type of evaluation you may choose to use an interview or questionnaire to generate your data. The interview takes more time, but has the advantage of 100% response. However, response in an interview may not give you figures that are as objective as you would get from an anonymous questionnaire. Formulating questions in order to get a meaningful answer is both an art and a science. For example, if you ask,

Was the CML service valuable? Yes _____ No_____

only malcontents of the highest order would check "no," especially after having worked closely with someone for six months or a year. In order to get a more meaningful answer, you might phrase the same question less directly, using the same type of rating

scales shown above. For example,

> How valuable were the articles provided by the CML in assisting you to make patient management decisions?
>
> 0 - no opinion
> 1 - of no value
> 2 - of little value
> 3 - of some value
> 4 - of moderate value
> 5 - of great value

There have been five published reports of CML program evaluations. Each one has points of interest when constructing the evaluation procedures for your own program.

1. Washington University School of Medicine -- This evaluation is interesting because it clearly defines the questions to be answered in order to determine the "real worth" of the program. The users were asked if they would be willing to pay for some of the service, and the answer was "no."[43]

2. University of Washington, Seattle -- The results of this evaluation varied widely by department. The results show the vital importance of a receptive team leader in making a success of a Clinical Medical Librarian program.[44]

3. Yale University -- The questions used in this evaluation are important examples of the type used to quantify perceptions. The purpose of the questions was to document a change in information-seeking behavior in users of a CML program, and also to document the ability of a CML to accurately pinpoint a subject in the literature.[45]

4. University of Missouri-Kansas City -- This evaluation used questionnaires sent to graduates (former users) of the CML program. The purpose was to see what the perceptions of graduates were to a program they used in school, and also to determine the extent of their present library use. Most interestingly the respondents report that they were "well prepared to utilize more traditional library services after their association with CML services ended" thus disproving somewhat the objection that CML programs make their users too dependent.[46]

5. University of Connecticut -- This evaluation compared the efficacy of a CML program to other methods of receiving diagnostic information (e.g., x-rays, lab studies). Information provided by the CML affected patient management 20% of the time, compared to 5% for laboratory data.[47]

FOOTNOTES

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[27]L. A. Cornelisse, "A Clinical Reference Program in the Department of Medicine, Tufts-New England Medical Center Hospital," Bulletin of the Medical Library Association 66 (October 1978): 457.

[28]Marshall and Hamilton, p. 424.

[29]Staudt, et al., p. 236.

[30]Schnall and Wilson, p. 280.

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[32]J. Farmer and B. Guillaumin, "Information Needs of Clinicians: Observations From a CML Program," Bulletin of the Medical Library Association 67 (January 1979): 53.

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